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DESCRIPTION OF A DOUBLE FŒTUS.

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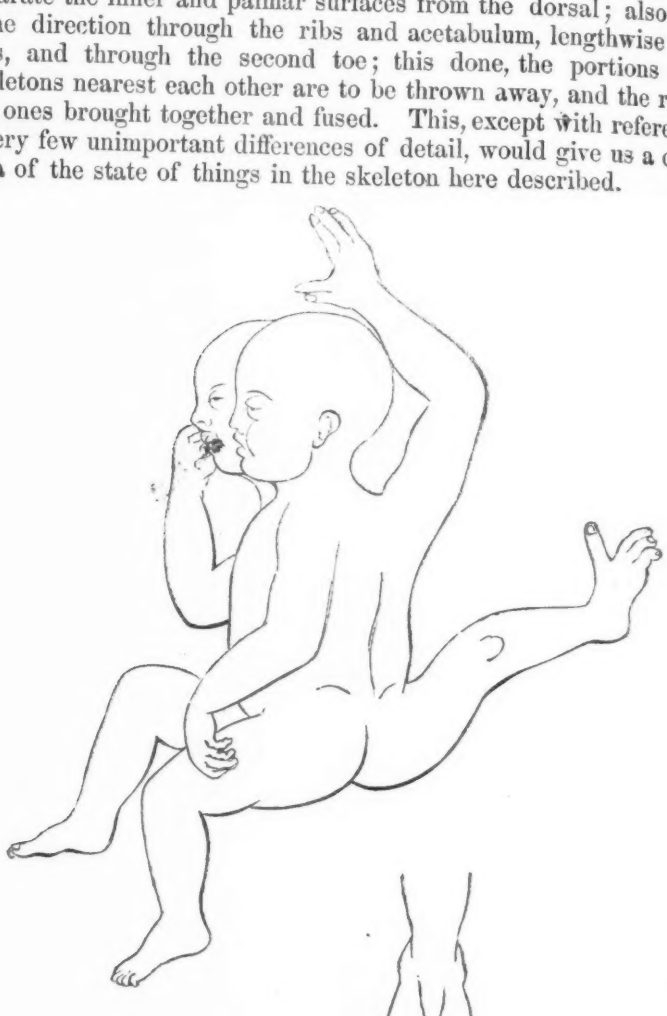
THIS fœtus was nine inches in length, had two well-formed heads—the right of which will be called A and the left B—facing each other somewhat obliquely; the two necks met on a level with the shoulders. Seen in front, the trunk and limbs had the usual form, except that the thorax was broad, and the limbs of the two sides were connected with different vertebral columns. There was neither genital nor anal opening, but a small spherical body existed in the place of a penis. From this a double raphé, in the shape of a V, extended backwards, each branch directed towards the coccyx of the same side.

On the hinder face a third symmetrical arm was attached on a level with the normal ones. The hand was in the same plane with the other segments of the limb, viz., from before backwards, the thumb pointing between the heads; it had no palm, but two backs, and each finger had nails on the two sides. The thumb and index finger were connate. The spinal grooves converged downwards, between which a third leg, symmetrical in structure, but somewhat distorted by pressure, arose on a level with the two normal legs, and was bent upwards, so that the toes pointed towards the back. The foot was compound, and provided with two groups of toes, of three each, one right and the other left, and a single large symmetrical toe arose from the middle of the back of the foot. This toe had a nail on each side. If this third leg is brought down to a level with the others, the heel is directed to the space between the other two feet, and thus the legs together form a true tripod.

Skeleton.—A general conception of the plan of the skeleton may be form by supposing two skeletons placed side by side, the arms nearest each other pointing backwards and palm to palm, and the corresponding legs with the toes turned backwards, and then each skeleton cut in a plane extending from the median line in front out-

wards to the right in one, and to the left in the other, through the clavicle, glenoid cavity, lengthwise of the arm and hand, so as to separate the inner and palmar surfaces from the dorsal; also in the same direction through the ribs and acetabulum, lengthwise of the legs, and through the second toe; this done, the portions of the skeletons nearest each other are to be thrown away, and the remaining ones brought together and fused. This, except with reference to a very few unimportant differences of detail, would give us a correct idea of the state of things in the skeleton here described.



It will be unnecessary to describe any other parts than those connected with the third limbs, it being borne in mind that, seen in front, the two crania and vertebral columns, the thorax, pelvis and limbs are formed as usual, except that the parts on the right side of the median line are connected with one head and vertebral column, and that on the left with the other. On the hinder side of the double thorax there is no sternum, except a small portion described below; the

ribs are short, bent strongly downwards, reaching nearly to the pelvis, and are united by their cartilages.

The *arm* is connected with the rest of the skeleton by means of a piece of cartilage, which is attached to the top of the sternum above described, and resembles a manubrium, but has no connection with the ribs; it is directed backwards between the two necks, and supports a symmetrical clavicle, which has the same direction. This has a deep fissure at either end, prolonged into a groove on the body of the bone. It is formed, as it were, of two clavicles so turned that their upper surfaces are pressed against each other and their greater concavities directed upwards. The *scapula* is composed of two bones, united at the glenoid cavity, having an acromion and spine on each side, but no coracoid processes. The bones of the arm, forearm and hand are perfectly symmetrical; all the bones of the last two are arranged in a plane passing through the fœtus from before backwards, the radius in front and the ulna just behind it.

The *pelvis*, as seen behind, has neither pubic nor ischiatic bones, but consists of two ilia, the left one of A and the right of B, united at the acetabulum, which last is on the median line. The *femur* is much compressed laterally, is slightly twisted, but otherwise symmetrical. The *tibia* and *fibula* are in the same plane with the arms, and each has a projecting point of bone, as if they had both been fractured. The tibia is the foremost of the two, and has a right and left tuberosity for the attachment of the right and left *patella*. The tarsal bones were not ossified, but the cartilage of a single os calcis was easily made out. The large and symmetrical toe had three phalanges, showing that it did not correspond with the great toe, contrary to what its great size would lead one to expect.

Muscles.—Only such parts of the muscular system will require notice as are connected with the limbs described above, all the others being normal.

The *left sterno-mastoid* of A and the right of B have the usual attachments to the head, but both are inserted into one and the same symmetrical clavicle and the single sternal piece above mentioned.

The *left sterno-hyoid* and *sterno-thyroid* of A and the right ones of B arise from a common sternum, but are inserted into the usual parts belonging to the corresponding heads of the fœtus.

The two *trapezii*, one arising from each head and vertebral column, are inserted into their respective portions of the compound scapula and clavicle.

The *levator anguli scapulæ* and the *rhomboidei* are double.

Neither *pectoralis major* nor *minor* were found.

A *serratus magnus*, on each side, arises from the ribs and is inserted as usual into the base of the scapula on the same side with itself.

A right and left *latissimus dorsi*, *supra* and *infra-spinatus*, *teres major* and *minor*, are all inserted into their respective portions of the

humerus on each side. The *deltoid* arises equally from the two portions of scapula and the end of the compound clavicle; it is inserted symmetrically into the humerus. A *subscapularis* arises from each base of the scapula, but the two are inserted into each other by the union of the tendons, just behind the glenoid cavity.

The *triceps* has two long heads, one arising from the edge of each half of the scapula, and two short heads arising from the side of the humerus, and is inserted as usual into the olecranon.

In the place of the *biceps* and *brachialis* is a single muscle, arising from the humerus by a pointed head on each side of the deltoid, and in this respect resembling the *brachialis;* but like the *biceps*, its tendon is inserted into the radius. There was no long head. Its action would be that of the biceps.

The following muscles were repeated symmetrically on the two sides of this third arm:—

Supinator longus and *S. brevis.*
Extensor carpi radialis longior and *brevior.*
Extensor carpi ulnaris.
Extensor carpi digitorum communis.
Extensor longus pollicis.
Abductor longus.

There were no *flexors* or *pronators*, nor any *extensor proprius* of the index or little fingers.

Below the ribs and their cartilages on this side of the fœtus, some ill-defined muscles occupied the place of the broad muscles of the abdomen, but could not be identified as such.

A *psoas* and *iliacus internus* existed on each side, but both were inserted into the single trochanter minor on the front of the femur.

A *glutæus maximus* arose from each side of the compound ilium, but both were inserted together into the back of the femur.

A single median *gracilis* arose from the symphysis of the ilia, and was inserted into the tibia in front between the two tuberosities.

The extensor muscles of the leg, viz., the *rectus* and *vasti*, were found in double series; the recti arising as usual from the pelvis, and the vasti from the lateral portions of the femur; each series was inserted into a corresponding patella, and by means of their respective ligaments into the right and left tuberosities of the tibia. Thus each set of extensors became a flexor with reference to the other. A *biceps* on each side was inserted into the top of the fibula. Besides this last-mentioned muscle there were no other proper flexors of the leg.

On each side of the tibia was a *tibialis anticus*, but both were inserted into the top of the foot by a common tendon.

An *extensor communis* on each side of the tibia was inserted into the three corresponding toes, and a slip was given from each to the symmetrical toe.

A *peroneus brevis* was inserted to the outer sides of the foot.

A single *gastrocnemius* was present, but no *soleus*.

A *flexor communis longus* on each side was inserted into the toes in the same order as the extensors.

Nerves of the Arm.—A *brachial plexus*, consisting of five pairs of nerves, is given off from each neck, viz., from the left side of A and the right of B, and with the exception of the internal cutaneous nerves, the branches of the two sides keep separate. In the axilla each plexus gives off a *circumflex* and an *external cutaneous* nerve, the latter perforating the supinator longus at the lower part of the arm. The two *external cutaneous* nerves unite and descend the back of the arm on the median line. The remaining branches of the brachial plexus pass on each side between the long head of the triceps and the humerus, descend on the sides of the arm, form the *musculo-spiral*, *radial* and *ulnar* nerves, which last two are distributed to the backs of the hand. No median nerve was found.

Nerves of the Leg.—The *sciatic nerve* on each side as it passes from beneath the glutæus consists of three portions, two lateral and one median; each of the former, one to the right and the other to the left, passes along the edges of the external vasti and within the lower ends of the bicipites, then over the top of the fibula, forming the *peroneal nerve*, and finally to the back of the foot. The two inner branches, one from each side, unite on the median line near the trochanter, into one, which descends as far as the popliteal space, where it divides into two branches, which descend behind the tibia, one on each side of the fibula and os calcis; the one going to the side of the foot belonging to B is the longest. The two form a right and left plantar nerve.

The *phrenic* nerves on the front side were distributed separately to the diaphragm, descending on each side of the pericardium. The posterior pair united on the hinder face of the pericardium, but their distribution was not traced.

The four *vagus nerves*, two from each head, were kept distinct throughout. The peculiar distribution of the *recurrent* branches will be mentioned further on.

Viscera.—A rather small thymus gland occupied the upper part of the cavity of each half of the thorax, and rose a short distance in the usual place at the base of each neck. Two complete sets of lungs existed, and between them a single pericardium enclosing two distinct *hearts*. These were entirely distinct from each other, but symmetrically developed, or right and left. A single lower *vena cava* entered the pericardium from below, and then entered each venous auricle by separate branches; the same was true of the upper vena cava. The venous auricles of the heart were on adjoining sides, and the arterial auricles on the sides most distant from each other. The aorta of the heart of A descended on the right side of the vertebral column of A, and that of B on the left side of its vertebral column; in this case the right aorta, or that of A, was the one transposed,

while that of B pursued the ordinary course. The innominate artery of A arose from the left side, and that of B from the right side of the arch. The recurrent branches of the vagus were in conformity with this arrangement. The left recurrent of A and the right of B passed beneath the subclavian, while the right of A and the left of B passed beneath the arch of the aorta.

A large opening was found in the diaphragm on the right side, and through this the right portion of the liver and some portions of the intestinal canal had passed.

The *umbilical cord* had one vein and two arteries as usual, the former entering the liver on the median line of the body.

The *liver* was not quite symmetrical in its shape, having been distorted apparently by the forced position of a part of it in the cavity of the thorax. It consists of three portions, a right and left lobe, each of which corresponds with the right lobe of a normal liver, but one of them is reversed. These unite on the middle line and form a third lobe, which corresponds with the left lobe of the two normal livers fused. Each lateral lobe has a bile duct, gall-bladder and common duct; also a portal vein, symmetrically arranged. A *vena cava inferior* passes up on each side in the notch formed by the union of the median and lateral lobes, but the two unite before entering the pericardium.

There were two *stomachs*, with their pyloric portions turned towards each other; the great cul de sac of that belonging to A was in the right hypochondrium, and therefore reversed, while that of B had the usual position and was in the left. A *spleen* was connected with each. The right and left duodenums came together a short distance from the pylorus and formed a lateral communication, but afterwards separated, and though side by side continued distinct nearly to the cœcum, which, as well as the large intestine, was single. The length of the small intestines was 32 inches.

The urinary organs consisted of two compound kidneys and an urinary bladder with a double cavity. Each kidney had its hilus turned from the median line, was strongly bent on itself and had a *renal capsule* at each end, so that there were in all four renal capsules. Each kidney also had two ureters, one of them much larger than the other, one set opening into the upper and the other into the lower cavity of the bladder. This, excepting a constriction near its fundus, had the usual shape; but inwardly the mucous membrane formed a partial partition between the upper and lower portions. The two sets of ureters opened, one just above and the other just below this partition.

There were two pairs of testes—one resting on the kidneys or quite near them, and the other just at the entrance of the internal abdominal ring on the front of the fœtus. Each testis had an epididymis and vas deferens, but in neither case was it traced to its connection with the bladder. There were, however, to be seen just

below the septum of the bladder, mentioned above, three openings, which probably belonged to the vasa deferentia, one pair entering the bladder separately, while the other united and entered through a single opening.

The descriptions of double monsters by many different observers all show that the tendency is to symmetrical development, so that when an organ ordinarily single becomes double the two organs are always right and left. This is well seen in the specimen just described, in the existence of a right and left heart, right and left stomach, spleen, &c. In the cases where organs commonly double are increased in number, we may have either a third organ or two entire ones. In the first case the law of symmetry is manifest in a most striking manner. For all such third organs, if not compound in structure, are divisible into right and left halves, and half from a different fœtus, and repeating each other oppositely. If, however, they are made up of many parts, as a limb, then the individual parts repeat each other in a similar way. In the arm already described, the muscles repeat and balance each other exactly throughout, and the same is mostly true of the legs.

The force, whatever it be, which regulates the distribution of matter in a normal or abnormal embryo, always acts symmetrically, and if we look for anything among known forces, analogous to it, it is to be found, if anywhere, in those known as polar forces. The essential features of polarity, as in symmetry, are antagonism, either of qualities or forms. Studying the subject in the most general manner, there are striking resemblances between the distribution of matter capable of assuming a polar condition and free to move around a magnet, and the distribution of matter around the nervous axis of an embryo.

In every complete series of magnetic curves there are two neutral lines, one extending lengthwise of the magnet, so that the curves formed are divided into right and left; secondly, a transverse one, the particles on each side of which are known as forming the north and south curves. In the right and left series, those which are on one side of the magnet are symmetrical with those on the other, but not in themselves; and in the north and south series those on either side of the transverse neutral line are symmetrical with each other, but not in themselves. Thus we have in the first case something analogous to right and left or bilateral symmetry, and in the second to fore and hind symmetry.

If two magnets are placed parallel to each other and at a distance, then two complete sets of curves are formed in the usual way; but if they are brought so as to be within each other's influence, the magnetic figure now becomes a compound one, the central portion of which consists of the united curves from the two adjoining sides of the magnet, and the particles from either series of curves do not pass beyond the line where the forces of the two magnets are in equilibrium.

If the magnets are now inclined towards each other so as to touch at one end, having a V-shape, then we shall have the particles arranged so as to produce a figure double in front but single behind. The ends which are separated will arrange the particles so as to form a double series of curves, independent of each other; but as the magnets come nearer together, the curves begin to press against each other, and an intermediate symmetrical figure is formed.

The distribution of matter in animals having bilateral symmetry, both in normal and abnormal development, is analogous to the series of distributions just described. In normal development such distribution comprises, 1st, all that we designate as right and left; 2d, all that we designate fore and hind, with reference to the ends of the long axis of the body, or to what has been called fore and hind symmetry. In the fully developed animal this last is less easily recognized than the first, but in the embryo it can be traced without much difficulty.

1st, in the nervous canal, enlarged at either end, the foremost enlargement for the brain, permanent; the hindmost, transitory, except in birds, where it forms the enlargement enclosing the rhomboidal sinus.

2d, the plates of the vertebral column first appear midway, and are then developed in opposite directions, extending it backwards and forwards.

3d, in the intestinal canal, with its allantoidian sac, which is respiratory, antagonizing the pulmonary sac, also respiratory.

4th, in the limbs, which throughout all their earlier stages assume positions strictly antagonistic.

If on one and the same yolk two nervous axes are formed on opposite sides of the yolk, each will distribute the matter under its influence without coming in collision with that of the other, except near the umbilicus, so that two nearly perfect embryos will be formed.

If the two nervous axes are formed near to each other, so that the particles under their influence come in contact, then at the line of contact a series of intermediate organs or limbs, as the case may be, under the influence of the two axes, will be formed, as in the specimen described in this paper.

Furthermore, if the axes are inclined so as to form a V-shaped figure, the two separated ends will have a head more or less complete; but as the two converge, the organs become more or less fused, and at length the hindmost are reduced to the normal type, the intermediate ones having become obsolete.

From the Thirty-third Annual Report of the Trustees of the State Lunatic Hospital at Worcester we take the following statistics:—Patients in the Hospital Oct. 1, 1865, 344; admitted during the year, 221; whole number under treatment, 565; discharged recovered, 105; do. improved, 58; do. not improved, 28; died, 33; whole number discharged, 224; number remaining Sept. 30, 1865, 341.

A CASE OF OPIUM POISONING TREATED BY TRACHEOTOMY.

By G. P. Hachenberg, M.D., New York.

[Communicated for the Boston Medical and Surgical Journal.]

Last year, when connected with the U. S. A. Hospital, No. 1, Nashville, Tenn., I was sent for one night by a ward surgeon to consult with him in regard to a patient that was supposed to be dying from suffocation. When I first saw the patient I found him in a state of profound coma, with an alarmingly slow, stertorous respiration. There could not have been more than three or four respirations per minute. He breathed as if he had an obstruction in the larynx, at first leading me to suspect œdema of the epiglottis. However, a digital examination dissipated that idea. It was denied by the physician and nurses that the man had got opium or any other medicine. As prompt action was indicated to give the patient immediate relief, I hastily performed the operation of tracheotomy. Immediately after the operation, if it had not been for the soft, quick pulse, I should have considered the man dead. Artificial respiration was resorted to, and in a few minutes he breathed through the opening made in the trachea. In about fifteen minutes after the operation he opened his eyes, raised himself up, and looked around the ward. I now examined more carefully the pupil of the eye, and, from its contracted condition, concluded that the man was poisoned by opium, and thus expressed myself to his physician. Further inquiry was made into the case, and it turned out that he, through some mistake on the part of one of the stewards, had taken half a grain of morphine every half hour until two and a half grains had been taken.

The opening in the trachea was left open for twenty-four hours, and then closed up with adhesive strips. The patient recovered perfectly.

March, 1866.

OVARIAN DISEASE TREATED BY CHLORATE OF POTASS.

By W. Craig, L.F.P.S.G., Ayr.

Disease and enlargement of the ovarium have long resisted all kinds of treatment, and many medicines have been used in attempts to absorb the tumor, but hitherto unavailingly. Extirpation for some time past has been the favorite method of treatment, but it is attended with a large expenditure of life—at an average, nearly every second case. It is very desirable, then, that a mode of treatment could be discovered which would prevent such an expenditure of life, and this usually when the patient is in the most hopeful and interesting period of her existence.

In the following cases the cure has been effected by the administration of chlorate of potass. I could form no opinion regarding the nature of the tumors, other than that they were ovarian.

In his work on the Science and Art of Surgery, Mr. Erichsen states, that "medical means exercise no influence in curing, and but little if any in retarding the progress of ovarian tumor."

Dr. Charles Clay, of St. Mary's Hospital, Manchester, makes the following statement in the *London Medical Review*:—"I conscientiously believe that neither medical treatment, external or internal applications, pressure, nor galvanism, are of the slightest benefit. They neither cure nor palliate the disease. All such attempts, then, are fallacious, and only throw obstacles in the way of any benefit that extirpation of the tumor offers; increasing the difficulties of that operation, if not defeating it altogether."

The treatment in the following cases is an exception to the above statement, as they were treated and cured by means of a very simple medicine, viz., chlorate of potass. It may be that one only of the species into which this disease is divided may be of a nature to be removed by this medicine, and, consequently, the others may remain uninfluenced by it; but, during the life of the patient, unless after the operation, it is not always possible to learn the exact nature of the tumor; but whatever be its character, it can do no harm to the patient to allow her to have the benefit of a trial of this medicine, as it has a favorable action on the functions of the body, irrespective of the action on the tumor.

Chlorate of potass, as is well known, is a medicine that can be used with the utmost freedom. I do not pretend to offer an opinion as to its *modus operandi* in this disease. The circumstance of this salt having in combination a large quantity of oxygen, which is held feebly by the potass, and is let free in the system, may cause it to operate beneficially on the constitution, invigorating and improving the animal functions so as to enable them to throw off these morbid growths.

Case I.—Miss S., of Ayr, of middle height, sallow complexion, and apparently of sound constitution. The tumor is on the left side, rising out of the iliac region. It is about the size of a child's head of a month old. The patient states that the tumor is sore when pressed, also during defæcation and micturition. She menstruates regularly. It is free in its attachments, and rolls from side to side as the patient turns in bed. It is about five years since she first observed the enlargement, and it was about a year after this when she first applied for medical advice. She had the counsel of many medical men, and took many medicines, but received benefit from none of them. She was under the treatment of one medical man during the twelve months immediately before coming to me. This gentleman used many medicines and numerous external applications, all without any beneficial effect. He then,

with the consent of other medical men, resolved to perform the operation, but he died when preparing for it.

When she came to me I immediately put her upon a saturated solution of chlorate of potass—a dessert-spoonful thrice daily. She stated that she had only taken the medicine two or three weeks when she felt a gradual improvement in her general health. The tumor gradually diminished in bulk till, at the end of ten or twelve months, it disappeared. After the tumor had been so far reduced as not to be felt through the parietes of the abdomen, it could be felt in its greatly reduced size lying close to the uterus. About this time it was about one and a half inch in diameter. Subsequently, the tumor has disappeared completely, with the uneasiness and symptoms depending on its bulk, and she has since continued in her usual health.

Case II.—Miss C., from London. The attention of this lady was first called to her complaint when taking a bath in June, 1861. At this time she felt a swelling rising from the right side of the pelvis. It was then about the size of an egg, and moved from the side to the middle of the abdomen. There was no pain in the tumor when the body was at rest, but in quick walking and some other forms of bodily exertion, it seemed as if bound by a tight network all over the lower part of the right side. There was frequently a dull pain in the iliac region, and more rarely a sharp, stinging pain; but when at rest, or in ordinary walking, there was no pain. The patient states that her health was very sensibly affected by it. "I lost strength and tone, and became listless." The tumor grew rapidly from June to September, but after this the enlargement was slow in its progress. The tumor till now was always movable, but subsequently it became more fixed.

She came expressly to Scotland to consult an eminent practitioner, and was under his treatment two months of the summer of 1862, and nearly as long in the same season of 1863.

It was in the autumn of 1863 that she consulted me. On examining the tumor, I noted no particular induration of its texture, but its size was about that of a large fist. Her former adviser had used many medicines and appliances with but little effect. The patient was twice cupped and leeched over the tumor, and the skin was twice painted over with a preparation which acted like a blister, and was also painted many times with combinations of iodine. She had tonics from the beginning, and daily a solution of bromide of potass. She also passed an electric current through the tumor for half an hour daily, and this was done during two years. The only effect of the treatment hitherto applied was to make the tumor "more compressed or harder." Immediately on her application to me, I commenced the administration of the saturated solution of chlorate of potass in dessert-spoonfuls thrice daily, and with what effect I shall allow the patient to tell. "I will add, that about three or four

months after I had seen you, and taken the medicine you prescribed, the swelling disappeared as it came, silently and suddenly. I continued your medicine, and the occasional use of the electric battery until a few months ago. I use neither now; and as I said before, I have no swelling; none whatever; none."

I saw this lady in London a short time ago, and I could not discover a vestige of the tumor.

CASE III.—Miss H., from Glasgow, has had for a considerable time a tumor of the left side in the left iliac region. It was about the size of a large fist closed. She had used the chlorate of potass for two or three months before observing much diminution of the tumor, and at this time left off the use of the medicine. She was induced, however, to commence the use of the medicine again, and she states, that during the last few weeks, whilst using a renewed supply, the tumor has become much smaller, and gives less uneasiness.

A fourth case, in Ayr, presented herself with a small tumor in the left iliac region. The tumor had been observed for many months. It was painful, more especially when it was pressed. The size could not be well estimated, as the abdominal parietes were thick. I commenced with the chlorate of potass, but the patient soon became impatient and would not persevere, and has failed to continue the medicine.

So few cases go but a small way to establish the efficacy of this medicine in the cure of ovarian tumors; but, in view of the declaration of experienced and practical men who have seen much of this disease, and who maintain that medical means exercise no influence in curing, and but little in retarding the progress of ovarian tumors, it is right to produce facts, in however small numbers, when they show that medicine is not so inefficacious as represented by some writers on this subject.

It may be admitted, that before publishing my experience of the efficacy of chlorate of potass in the treatment of ovarian disease, I ought to have been able to present a larger number of successful cases; but in a small town, among a rural population, there is less chance of meeting a satisfactory number of cases than in the crowds of large cities.

Though the number of examples be small, the success attending the treatment ought to encourage a trial of a medicine that can be used with the greatest freedom, and could always be tried—provided there is no contra-indication—before having recourse to such a formidable operation as that of ovariotomy.—*Edinburgh Medical Journal.*

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY CHARLES D. HOMANS, M.D., SECRETARY.

DEC. 11th, 1865.—*Tumor resembling the Female Mamma.*—Dr. PETER PINEO, late Medical Inspector, U. S. Army, who was present by invitation, related the following case:—In April, 1865, a negro, 40 years of age, presented himself for examination as a recruit, in Charleston, S. C. On being stripped, his physical condition was found to be perfect, with the exception of a round, flattish protuberance on the anterior aspect of the right thigh, at about the juncture of the upper and middle thirds. This protuberance was about 4½ inches in diameter, had a glandular feeling, and an elevation in the middle, like a nipple, with a depression at its point, and resembled strongly a female mamma. The negro said it had always been there, and from his account it seemed to have been congenital. The resemblance to a female mamma was so great that the examining surgeon called the attention of Dr. Pineo to it. Dr. P. showed a drawing of the tumor.

JAN. 22d, 1866.—*Warty Vegetations in Fauces, on Epiglottis and in Larynx.*—Dr. H. K. OLIVER showed the specimen and described it. The account of the case was furnished by Dr. F. H. Gray, in whose practice it occurred.

Master W., aged 5 years. In the latter part of July, 1864, patient swallowed a small quantity of aqua ammonia, from which he suffered in his throat severely for twenty-four hours. He was seen by his physician, on the day following the accident, and was as comfortable as usual, excepting that his voice was indistinct. All trouble soon passed away.

Eight months afterwards, the boy complained of slight cough, and was unable to speak above a whisper. Simple remedies were advised, but without relief to these symptoms.

In July, 1865, these symptoms continuing with occasional vomiting, a portion of the right tonsil was removed, but without relief. On examination of the throat, the tonsil was adherent to the uvula throughout its whole length. At this time the child was greatly troubled at night with urgent dyspnœa. The uvula and tonsil were removed with marked relief, and the boy seemed in a fair way to do well but for his voice, which was still a whisper. Some little time before death dyspnœa returned, and he died after considerable suffering. Dr. Cabot saw the child some months since, and wished to perform tracheotomy for its relief, but the parents would not consent to it.

In the specimen the growths resembled the vegetations sometimes occurring in persons who have been affected with gonorrhœa and in pregnant women. They varied in size from a pin's head to a pea, some of them being pedunculated. They were situated in great numbers over the back of the tongue, upon the tonsil, upon the lingual face of the epiglottis and upon the laryngeal face of the same. The vocal cords, the ventricles of the larynx and the false cords were entirely hidden by a solid mass of the same kind of growths, springing from each side and meeting at the middle, so that water did not pass from the larynx into the trachea, nor, when the parts were reversed,

from the trachea into the larynx. Below the vocal cords there were no traces of the disease whatever. According to the report of Dr. Ellis, the growths consisted wholly of epithelium.

JAN. 22d.—In regard to the case of *Tumor of the Larynx* reported by Dr. Cabot, printed in the Appendix, Dr. OLIVER said that although this case had presented many obstacles to laryngoscopy, he had nevertheless on several occasions had a complete view of the growth described by Dr. Cabot, and at no time did it present the raspberry-look as seen at the operation. The appearance was that of a smooth, shining tumor filling up the greater part of the larynx, the membrane covering it being continuous with that of the ary-epiglottidean membrane. Neither the cartilages of Wrisberg nor those of Santorini were to be distinguished. The mucous membrane passed from the posterior part of the larynx directly over these cartilages on to the superior surface of the tumor, so that the cartilages mentioned were wholly buried from sight. On one or two occasions a yellowish secretion was seen on the anterior part of the growth, where it seemed to touch the thyroid cartilage at its angle. After the removal of the tracheotomy-tube, the opening in the larynx—the artificial glottis—was of ample size, but irregular in shape. No vocal cord or false cord could be seen. The arytæno-epiglottidean membrane and the arytenoid commissure were re-placed by a jagged edge, with no sign of the proper cartilages; while on each lateral surface, interiorly, there were also small jagged prominences. Dr. Oliver said that the growth seemed to be similar to those epithelial tumors described by numerous writers on laryngeal growths.

FEB. 12th.—*Penetration of the Eye by a Foreign Body, and its Discovery at the Fundus of the Globe by means of the Ophthalmoscope.*—Dr. WILLIAMS gave an account of a lad of 18, who presented himself at the Ophthalmic Clinique of the City Hospital on the 7th of February, with the statement that in cutting a piece of lead with a knife, twenty-four hours previously, something had got into his right eye. As, on examination, a small cicatrix was seen in the cornea, and behind this a perforation of the iris, it was probable that a small fragment, projected with force, must have entered the eye, and on further inquiry it was ascertained that in cutting the lead he struck the back of the knife with a hammer, undoubtedly knocking off a bit of steel from one of these tools.

With the ophthalmoscope the missile could be traced through the outer margin of the crystalline lens, where its course was marked by a slight opacity. The optic disc and most of the retinal surface presented a healthy aspect, but, on examining the region of the macula lutea, the foreign body could be seen with perfect distinctness, implanted in the retina and surrounded by a narrow white circle. Vision was still but very slightly affected.

The patient was advised to submit to the immediate removal of the foreign body by means of the small canula-forceps; as, if he did not thus preserve useful vision, which would of course be doubtful, he would be spared the long-continued suffering attending the gradual elimination of the bit of steel, which is almost certain to take place—would avoid the danger of sympathetic inflammation of the other eye, which may be excited during the process of expulsion—and would doubtless have a better looking eye than will remain after the steel is expelled by the

efforts of Nature. But to this operation he demurred, unwilling to believe that so dark a future could be anticipated for the injured eye. He was therefore advised to keep the pupil dilated, that the iris might not become irritated by pressure from the injured lens as it becomes swollen in the transformation to traumatic cataract, and to report himself in case of the occurrence of any new symptoms, that all possible precautions may be taken against sympathetic inflammation of the opposite eye.

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TRICHINA DISEASE.

So much interest is at present manifested by the public and the press in trichinous disease, and the accounts of the panic which prevails in the pork-eating districts of Europe excited by the recent occurrence of several epidemics, and so little is generally known of its nature here, even by physicians, that we shall again ask the attention of our readers to the subject, although it has been already presented to their notice several times in our pages.* Before giving an account, however, of some of the recent investigations of observers who have made a special study of the natural history of the trichina, we will again briefly describe its nature and the disease it produces.

In the first place, it is in no way connected with measly pork. Measles in swine is the encysted stage, scolex or inverted head, of tænia solium. Measly flesh being eaten by man, the scolices, unless previously destroyed by cooking, escape from their sacs within the stomach, and attach themselves by their armed heads to the intestinal walls. From the head, already mature, are developed the joints which make up the body of the tapeworm. The first formed or oldest of the joints, or proglottides, when sexually ripe escape from the intestinal canal of their host, and being eaten by swine the ova they contain are set free. During digestion the egg shells are dissolved, and the embryos find their way into the tissues of their new host to be again converted into encysted scolices or measly pork. In this stage the tapeworm is called cysticercus cellulosæ.

The trichina spiralis, on the other hand, does not belong to this order Cestoidea or encysted worms, but to the Nematoidea or round worms (the ascarides and oxyurides), and its development is much less complicated. Trichinous pork contains the young worms either free or coiled up and enclosed in capsules within the muscular tissue, according to the length of time they have remained there. In shape they resemble the adult, but are smaller and sexually immature. Being eaten by man, unless previously destroyed by cooking or other process, they pass the stomach uninjured and escape from their capsules if encysted. In the intestinal canal they grow rapidly and become mature in a few days. Impregnation immediately follows, and the young begin to

* See Vol. Lxx., pp. 275 and 305, and Vol. Lxxi., p. 381.

leave the female within a week, in the form of minute transparent worms. They may continue to escape for weeks, and in immense numbers. They bore at once into the intestinal cells, and penetrate to nearly all parts of the muscular system. They feed upon the muscular tissue, and after an indefinite period coil themselves up and are enclosed in a sac which in time becomes cretaceous. In this quiescent stage they may remain alive for years, and after the death of their host may become mature in turn by entering the intestinal canal of some other host.

The symptoms caused by their presence vary according to the number eaten and the stage of development. At first nausea, loss of appetite and intestinal irritation. Afterwards debility, fever, œdema of the face, movements of limbs painful and sensitiveness of muscles on pressure. Lastly, great inflammation of intestines with bloody stools, increased muscular pains, partial paralysis of muscles of deglutition, speech and respiration, and finally death from exhaustion. If only a small quantity of the trichinous pork be eaten, the symptoms will be mild, and in all cases they will disappear when the worms have become quiescent or encysted in the muscular tissue.

The history of the trichina is interesting, and may be briefly told as follows. Many years ago it was found in the muscles of man after death, and described by Owen. Subsequently Leidy found it, also encysted, in the flesh of the hog, and since then it has often been noticed in dissecting-room subjects, giving a sanded aspect to the red muscular tissue. It was always considered harmless, however, and in 1855 Küchenmeister published a theory that it was only the immature form of Tricocephalus dispar, a minute thread-like intestinal worm. Experiments conducted by Virchow and Leuckart, however, in 1859, by feeding animals with trichinous flesh, demonstrated the error of this opinion, and also the important facts that the encysted trichinæ were set free in the intestinal canal, there to become mature ; that living embryos were developed within them, which escaped to wander in the muscular tissues of the same host, or might be transferred with the intestinal contents to another animal to become in turn the encysted form ; and that the cysts were formed within and consisted of the thickened sarcolemma of the primitive muscular fibres, not, as had been supposed by some observers, within the capillary tubes.

These results pointed unmistakably to the manner in which man also became infected, but they were still considered of no pathological consequence until early in 1860, when a servant girl died in the hospital at Dresden after a month's sickness, with symptoms like those above mentioned, and on examination after death Zenker found the muscular system filled with free and moving trichinæ. He concluded that it was a case of fresh infection, and that the worms had been the cause of her death. A microscopic examination of the contents of the intestine revealed the presence of numerous mature trichinæ of both sexes, the females still containing living embryos. Portions of the muscular tissue of the girl were sent to Virchow and others interested in the subject. The former administered it to a rabbit, which was killed by the wandering of the young brood set free within its intestine; the others, as well as Zenker, fed dogs with the same, but the results corresponded with those previously and subsequently obtained, viz., that trichina undergoes only a partial development within their intes-

tinal canal, does not long remain there, and does not wander into their muscular system. It remained to be ascertained where the girl obtained the trichinæ which caused her death. She was taken sick after Christmas in the country where it was the custom to kill swine for the feast of the season, and Zenker, knowing the frequent occurrence of trichinæ in these animals, concluded that some connection would be found between the disease and the meat. On visiting the place he found that the farmer with whom she had lived had killed a hog on Dec. 31st, and that the ham and sausages which still remained of it contained numerous encysted trichinæ. He found, also, that the farmer and his wife and the butcher had all been ill with symptoms similar, though milder, to those the girl had exhibited.

This case, so complete in itself, not only established the connection between trichina in the hog and in man, but demonstrated the existence of an unsuspected and frightful disease, and explained much that had been mysterious in former cases of death from sausage-poison and other unknown causes. It was followed by other epidemics of a fatal character, the latest and worst of which is still carrying off its victims at Hedersleben, so that a panic has spread over Europe, and the hog seems doomed to take his proper position as an unclean beast. Scientific commissions have been appointed by many governments to study the disease, and the natural history of this little worm has become of national and political importance, and has received the attention of some of the best scientific observers of the day.

It being established that man gets the disease from swine, these investigations have been directed to the source of infection in the latter animals. Many immature round worms have been found in animals and accused of being trichinæ, but more careful examinations and experiments have subsequently proved their innocence. Among these are to be mentioned worms found in moles, frogs, insects and angle-worms, upon which swine are known to feed. Even vegetables have been laid under suspicion, and particularly a little nematoid worm which infests the beet-root, but this too was found to be zoölogically distinct. Statements have also been made that beef is not free from trichinæ, but there is no ground whatever for such reports, and the same may be said of the flesh of birds like ducks, geese and pigeons, which might receive infection by means of the intestinal discharges of trichinous animals, for it has been found impossible to reproduce them by artificial feeding.

It may be safely stated that the only natural occurrence of trichinæ is practically limited to the hog, although they may be accidentally developed in the cat and rat, and artificially in the rabbit. There can also be little doubt that the disease is kept up between the two former precisely as the tape worm continues to exist. Man, we know, gets trichinosis by eating trichinous pork, but how can the hog, who does not eat man, become in turn infected? He cannot eat the eggs of trichinæ as he does those of tænia, because there are none to eat, that is, the worm is viviparous and the young, we know, remain within the human host. Without doubt, however, many of the mature females escape from the intestines after impregnation, and in this way are eaten by swine. It is well known that when the diarrhœa is severe during the first stages of an attack of the disease the patient is not so severely affected as others who have partaken of the same

pork, and this is due to the escape of the parasite before the young are born in great quantity, and such persons, not sick enough to keep the house, and discharging their excrements at large, are the probable sources of infection in swine. It has, in fact, been noticed by Virchow, that epidemics succeed each other at regular intervals. After infecting themselves in the way just described, the swine are not again killed until the next general slaughtering season comes, when another follows, to be succeeded by others after a similar interval. It may also be possible that portions of trichinous flesh may pass through the human intestine unchanged and thus be eaten by other animals, or that rats may eat it originally, or in the dejections of man, and be subsequently eaten themselves by swine. We have seen that dogs cannot be made trichinous by eating diseased flesh, but they may discharge the contents of their intestines containing partially developed trichinæ where swine have access to them; and lastly, it is not impossible that swine may infect each other by intestinal trichinæ alone.

It is a question of importance how long this entozöon may retain its vitality in the tissues, and be capable of transmitting the disease to man. Among the cases which have been carefully investigated in Germany as bearing upon this point, is one communicated to Virchow's Archiv, which possesses peculiar interest as having originated in this country. In 1861 a woman was admitted to the Altona hospital with a cancer of the breast of twelve years' standing, which was removed, and, strange to say, on microscopic inspection, found to contain a considerable number of trichinæ. This led to an inquiry, which gave the following information. In 1856 she was residing in the city of Davenport, Iowa, with her brother, and was taken suddenly ill with gastric and rheumatic symptoms, together with œdema and partial paralysis. Convalescence was very protracted, and she never recovered the free use of her fingers at the piano. Her brother was attacked with similar symptoms at the same time, but they were much less severe. After her death at the hospital in 1864, many of the muscles were found to contain encysted trichinæ, the capsules being very cretaceous. Portions of this tissue were given to a cat which was kept in confinement, and after its death on the sixteenth day its muscular system was found crowded with free trichinæ of various sizes, all within the enlarged tubes of the sarcolemma. There seems to be no doubt that this was a case in which the trichinæ remained alive seven or eight years, and were capable of reproducing the disease after this long hybernation. Virchow relates another case still more remarkable, where the worms were living after 13½ years, and on being removed from their cretaceous prisons moved actively when placed in the sun, and were found capable of reproduction within the intestinal canal of a rabbit. As to the period at which the capsules are formed within the sarcolemma, or when the cretaceous formation begins, nothing definite is known.

Trichinosis is no new disease. It existed, as the above cases show, many years ago, and it is undoubtedly as old as the habit of pork eating; we are only beginning to recognize it. In certain parts of Europe where raw pork is largely eaten in the form of ham and sausages, and where the habits of swine and their keepers are not very unlike, there is ample opportunity afforded for its spread and frequent occurrence. The most careful attention, however, will not prevent

the accidental infection of these animals, as the history of some of the epidemics illustrates. Unfortunately, the disease is latent in them, producing no symptoms which cause its presence to be suspected, and the appearances of the flesh after death are not such as to attract attention. It can only be recognized by its effect on those who unwarily eat it, or by microscopic examination.

In some parts of Germany government obliges all pork to be inspected by an appointed person, before it is sold, and even the butchers are forming associations among themselves for the same purpose, and are learning the use of the microscope, the present horror of pork affording them leisure for such studies. The inspection, however, should never be entrusted to an incompetent observer, and should be thoroughly performed. One of the latest cases of the disease in Prussia was produced by eating flesh which had passed examination, and subsequent investigation showed that only a portion of the shoulder had been sent for examination, and that other parts were abundantly infected. It has been found that the muscles contain most trichinæ nearest their attachments, and that in ham they occur in greatest numbers in these parts about the lower leg. Every hog should be examined in at least five places before it can be pronounced clean, for the parasites are sometimes distributed in the most unequal manner. In Brunswick out of 20,000 swine examined but two were found to be trichinous, but it will be remembered that each of the two great epidemics in Germany were caused by eating the flesh of one animal alone, but these two animals caused the sickness of 500, and the death of over one hundred persons.

Foreign Intelligence.—The cholera conference opened at Constantinople, on Feb. 13th, with an address from Aali Pasha. The regular sittings were to begin on the Monday after the Bairam.

The death of Prof. Brande, the well-known chemist, is announced. He occupied during his life the positions of Professor of Chemistry at the Royal Institution, Superintendent of the Mint and Editor of the Quarterly Journal of Science. He was the author of several well-known scientific works.

The failure of vaccination to prevent the spread of Rinderpest in England has proved the falsity of the theory concerning its variolous nature. Physicians and veterinary surgeons are entirely unable to control it, and the pole-axe and isolation are the only means employed with success against it.

Epizoötia among the Sparrows.—The *Union Médicale*, after referring to the epidemic among the gallinaceous birds which it had recorded some time previously, speaks of a disease now prevailing among the sparrows and finches. These birds are very peculiarly affected, and fly about in close proximity to human beings without the least apparent fear. This is found to be caused by a loss of sight almost complete, produced by a thick, whitish membrane spread over the surface of the eye, which almost conceals the pupil. Often the crystalline lens is completely opaque, constituting a true cataract. The poor animals actually starve to death for want of sight.

Trichinosis.—This disease has not as yet appeared in France, but in order to be forearmed, a commission, consisting of Dr. Delpech, of Paris, and Professor Reynal, of the Veterinary School at Alfort—the first appointed by the Academy of Medicine, and the latter by the Minister of Agriculture—has been directed to proceed to Germany to study this disease in all its phases. On the way they will stop for a time in Belgium, where the disease has made its appearance at Huy.

Dr. Fischweiler, a learned German physician, who died at the age of 109 years, ascribes his longevity to a constant habit of sleeping with his head to the north and his feet to the south. The same custom is said to prevent headache in those subject to it.

Dr. Evans, the celebrated American dentist in Paris, has just been made an officer of the French Legion of Honor.

The graduating class in the St. Louis Medical College, at the close of the late winter session, numbered fifty.

The St. Louis College of Pharmacy closed its first session on the 28th ult., with a class which is stated to have exceeded in numbers the expectations of the most sanguine.

The Humboldt Medical College, a new institution in St. Louis, commenced its summer course of instruction on the 5th inst.

The graduates of the Jefferson Medical College, Philadelphia, numbered 165 at the late commencement; and of the University Medical School, 162.

The number of graduates at the New York College of Physicians and Surgeons was 112.

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, March 24th, 1866.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - -	38	40	78
Ave. mortality of corresponding weeks for ten years, 1856—1866	44.1	38.6	68.27
Average corrected to increased population - - - - -	00	00	88.84
Death of persons above 90 - - - - - - - -		0	0

Books and Pamphlets Received.—Medical Electricity, embracing Electro-Physiology and Electricity as a Therapeutic, with special reference to Practical Medicine, &c. By Alfred C. Garratt, M.D., M.M.S.S., &c. Third Edition. Philadelphia: J. B. Lippincott & Co.—Second Annual Report of the Trustees of the City Hospital, Boston.

Married,—In Rochester, N. H., Dr. G. Newton Thompson, of this city, to Miss Lydia Pray, of Rochester.

Died,—In Philadelphia, fatally injured by an accident in the street, in his 67th year, William Mount, M.D., one of the leading physicians of Cincinnati, Ohio, and formerly Superintendent of the County Lunatic Asylum there.

Deaths in Boston for the week ending Saturday noon, March 24th, 78. Males, 38—Females, 40. Accident, 6—disease of the brain, 5—bronchitis, 1—cholera infantum, 1—consumption, 15—convulsions, 6—croup, 1—cyanosis, 1—diarrhœa, 1—dropsy, 2—dropsy of the brain, 2—dyspepsia, 1—gangrene, 1—hæmatemesis, 1—disease of the heart, 2—disease of the kidneys, 1—disease of the liver, 1—congestion of the lungs, 2—inflammation of the lungs, 9—marasmus, 2—measles, 1—old age, 1—paralysis, 1—puerperal disease, 4—smallpox, 2—teething, 1—tumor of the hip, 1—unknown, 4—rupture of the uterus, 1—whooping cough, 1.

Under 5 years of age, 32—between 5 and 20 years, 8—between 20 and 40 years, 22—between 40 and 60 years, 4—above 60 years, 12. Born in the United States, 62—Ireland, 15—other places, 1.